COMMENTS
PROPOSAL TO CONSTRUCT A LAND TREATMENT UNIT
FALCON REFINERY SUPERFUND SITE
INGLESIDE, TEXAS, SAN PATRICIO COUNTY
(DATED NOVEMBER 30, 2004)

A General Comments:

1 EPA Comment: The PRP should indicate in the introduction that this proposal is to address only visibly contaminated soils associated with the Administrative Order on Consent for Removal Action at the Falcon Refinery. It should also be stated that the approval of this technology for the Removal Action does not authorize the use of this technology for any subsequent Remedial Action that may be necessary.

2 EPA Comment: The EPA is concerned about the ability to adequately remove water from the LTU with the current proposed design. The PRP should consider placing trenches in the cell that have perforated piping covered with pea gravel at a 0.5% grade to the main drain to the sump which should be at a 1% grade. The LTU should be designed to achieve the ideal conditions for biodegradation. Ultimately, this plan needs to be stamped by a Professional Engineer.

3 EPA Comment: The cross-sectional drawings provided show a loading of 2.5 feet of waste soils. This appears to be extremely excessive. In order to achieve biodegradation you will need to be able to till the entire waste soil loading to provide oxygen transfer and release of excess water to the drainage system to provide the ideal conditions for biodegradation. I know of no piece of equipment that can till 2.5 feet. It is recommended that no more than 12 inches of waste soil be loaded on the cell.

4 TCEQ Comment: This Proposal refers to “visibly contaminated” and “grossly contaminated” soils. Are these terms interchangeable? What are the criteria for leaving “clean soils” in place?

5 Was there a bench-scale treatability study conducted? This study is necessary to determine microbial diversity and several environmental factors of the contaminated soils: (e.g., pH, salinity, redox potential, availability of nutrients, temperature, and moisture). This data will help estimate a bio-degradation rate and produce a more effective design.

EPA Comment: The EPA believes that there is sufficient indigenous bacteria

capable of degrading oil, however, the PRP must monitor those parameters identified in the TCEQ Comment above.

6 This proposal does not discuss any plans for periodic sampling to monitor the effectiveness and rate of bio-degradation. Please discuss these plans.

7 This proposal does not discuss the plans for enhancing bio-degradation (e.g., addition of nutrients, alkaline treatment, moisture, and aeration). Please discuss these plans.

8 This proposal does not address other important considerations (e.g., air monitoring or odor controls). Address these issues.

9 Given the close proximity of the wetlands this plan must discuss how it intends to protect these wetlands from additional contamination (e.g., run-off controls, soils sampling and groundwater sampling procedures to ensure the groundwater is not cross-contaminated).

B Section 2.0, Volume of Contaminated Soil: The second sentence of the second paragraph states "Assuming an average two foot depth for the impacted soil a volume of 1160 yd3 is calculated."

TCEQ Comment: Suggest that the PRP sample soils at various locations to determine the depth of the contaminated soils. The LTU can then be designed based on actual data and not assumptions.

C Section 3.0, Soil Analytical Results:

1 The first paragraph states that " On September 29, 2004, soil samples were obtained of the visibly impacted soil around Tanks 7, 26, and 27. "

TCEQ Comments Were there any sludge samples taken? What is the plan for sludge removal/treatment? Please show on the figures the location of each of the samples. What method was used to determine sample locations? Judgement, Random etc. Was there a Field Sampling Plan used? Approved by EPA?

2 The second paragraph states that "Results of the sampling, which are provided in Appendix A, indicated that no volatile organics were detected, metals were in the expected range of soil in the area, the only semi-volatile compound was phenanthrene with a maximum value of 72 mg/kg, and there were elevated results for TPH."

TCEQ Comments: Appendix A results show that since the TPH results were high, the samples had to be diluted. As a result, the detection limits were elevated

above the action levels for many of the volatiles and semi-volatiles. Therefore, the concentrations of these constituents cannot be quantified. Suggest that the samples be resampled, reanalyzed and "cleaned up" in order to quantify.

3 The fourth paragraph states that "The soil analytical results indicate bio-remediation is a viable option for soil remediation"

TCEQ Comment: Was there a bench-scale treatability study conducted to determine the viability of this option? If so, please discuss the results in this proposal.

D Section 6.0, Land Treatment Unit

1 General Comment: Provide a reference that describes the source of this LTU design guidance.

2 The second paragraph states that "Based on water level measurements in water wells located in the general area, the depth of groundwater at the site occurs at approximately 8 feet below the ground surface."

TCEQ Comment: Suggest installing monitoring wells upgradient and downgradient from the site to determine groundwater elevation and hydraulic gradient.

3 Fourth paragraph:

TCEQ Comment: Is the sump and transfer pump adequate as a leachate collection system?

EPA Comment: The EPA agrees with the comment from TCEQ in addition, it appears that the tank to be used may be undersized. You need to detail the engineering aspects of the proposal. Also, is there anyway you can make the slope to the northwest with tank and sump at that location therefore keeping it further away from the wetland area.

4 The second sentence of the fifth paragraph states "The LTU is designed to contain the 25 year 24 hour maximum rainfall event."

TCEQ Comment: Given the proximity of the adjacent wetlands is this design criteria appropriate?

5 Bullet B of the sixth paragraph states: Liner thickness will be 30 mil.

TCEQ Comment: Review the appropriate design guidance. Should the thickness

be 60 mil?

EPA Comment: The EPA believes the the minimum thickness should be at least 40 mil.

6 Bullet D of the sixth paragraph states: A one foot layer of clean soil will be placed on the liner for protection.

TCEQ Comment: Figure 6 shows a one foot layer of sand. Clarify the discrepancy.

EPA Comment: The paragraph should state sand.

7 The eighth paragraph states “The duration of the land treatment unit is estimated to be three years”

TCEQ Comment: Provide the basis for this estimate. Was there a bench-scale treatability study completed?

EPA Comment: The EPA believes that this should not take 3 years to complete but the PRP should define the basis for this estimate of time.

8 The last paragraph discusses plans for closure of the site.

TCEQ Comment: Suggest that the PRP prepare a more-specific closure plan for review and comment.

E <u>Section 7.4 Analytical Parameters</u>

1 The third paragraph states “If after two quarters of sampling a particular suite of parameters results in all non-detect analytical results the analytical method will not be sampled in

the future unless new materials are added to the LTU."

TCEQ Comment: Non-detect analytical results are not adequate unless the detection limit is lower than action levels. Revise this language to state the results have to be below the action levels.

EPA Comment: The EPA agrees with the TCEQ comment.

F Section 7.5 Incoming Waste and Sampling Documentation:

1 The third paragraph states that quarterly reports will be submitted to the EPA summarizing activities associated with the LTU.

TCEQ Comment: Suggest that this list include analytical results of waste soil being brought into the LTU as well as a comparison of the results of the waste soil within the LTU compared to the action levels.

EPA Comment: The EPA agrees with the TCEQ Comment and in addition, the LTU should be loaded and then unloaded and then loaded again rather than placing additional waste on the treated soil.

G Analytical Data: The Checklist Report states that custody seals were not intact on the shipping nor the sampling containers.

TCEQ Comment: Please address this issue and its potential for compromising the quality control.

EPA Comment: EPA agrees with the TCEQ comment. In addition, the PRP must provide a data validation/data usability certification as well as provide a summary table of the results compared to the EPA Soil Screening Levels and Texas Risk Reduction Levels for residential, commercial/industrial, and soil to groundwater transfer.